



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/941,934	08/30/2001	Joe Cargnelli	9351-072	6332

7590

11/30/2004

Stephen M. Beney  
Bereskin & Parr  
Box 401  
40 King Street West  
Toronto, ON M5H 3Y2  
CANADA

EXAMINER

DUONG, THO V

ART UNIT	PAPER NUMBER
----------	--------------

3743

DATE MAILED: 11/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

CS

<b>Office Action Summary</b>	<b>Application No.</b> 09/941,934	<b>Applicant(s)</b> CARGNELLI ET AL.	
	<b>Examiner</b> Tho v Duong	<b>Art Unit</b> 3743	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 03 September 2004.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 9, 11-33 and 35-50 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 43-47 is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 9, 11-20, 26, 27, 29-42 and 48-50 is/are rejected.
- 7) ☒ Claim(s) 21-25 and 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 September 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

Receipt of applicant's amendment filed 9/3/2004 is acknowledged. Claims 1-3,5,9,11-33 and 35-50 are pending.

#### ***Response to Arguments***

Applicant's arguments with respect to claims 1-3,5,9,11-33 and 35-50 have been considered but are moot in view of the new ground(s) of rejection.

#### ***Specification***

The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: the claimed subject matter of "the inner enclosure is substantially disposed within the connection portion" and "the fluid stream diverter disposed in the housing between the dispersion end and the ports of the connection end" are not described in the specification.

#### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed subject matter of "the inner enclosure is substantially disposed within the connection portion" and "the fluid stream diverter disposed in the housing between the dispersion end and the ports of the connection end" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing

Art Unit: 3743

should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled “Replacement Sheet” in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 15-16 and 48-50 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Regarding claims 15-16, the claimed limitation of “the inner enclosure is substantially disposed within the connection portion” is not supported by the original disclosure. As seen in figure 4, the inner enclosure, which is defined by interior walls of the housing, is much bigger than the connection portion. Therefore, it is not supported in the original disclosure that “the inner enclosure is substantially disposed within the connection portion”. Regarding

Art Unit: 3743

claim 48, the claimed limitation of “a fluid stream diverter disposed in the housing between the dispersion end and the ports of the connection end” is not supported in the original disclosure.

As seen in figure 10, the fluid stream diverter (200), the ports (143,144) and the dispersion end (140) are easily to be identified, it does not appear that the fluid diverter (200) is disposed between the dispersion end (140) and the ports (143,144).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 15-16, 26 and 48-50 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Regarding claim 15, the claimed subject matter of “wherein the inner enclosure is substantially disposed within the connection portion” and “a fluid stream diverter disposed in the housing between the dispersion end and the ports of the connection end” render the scope of the claim indefinite since the claimed subject matters are not described in the specification or in the drawings for the examiner to understand the invention.

Claim 26 recites the limitation “the interior wall” in line 3 and “the inner enclosure” in line 4. There is insufficient antecedent basis for this limitation in the claim. It does not appear that “interior walls” in claim 3 is a proper antecedent basis for “the interior wall”. It is also not clear whether “the inner enclosure” is the same as “an inner enclosure” as recited in claim 3.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

Art Unit: 3743

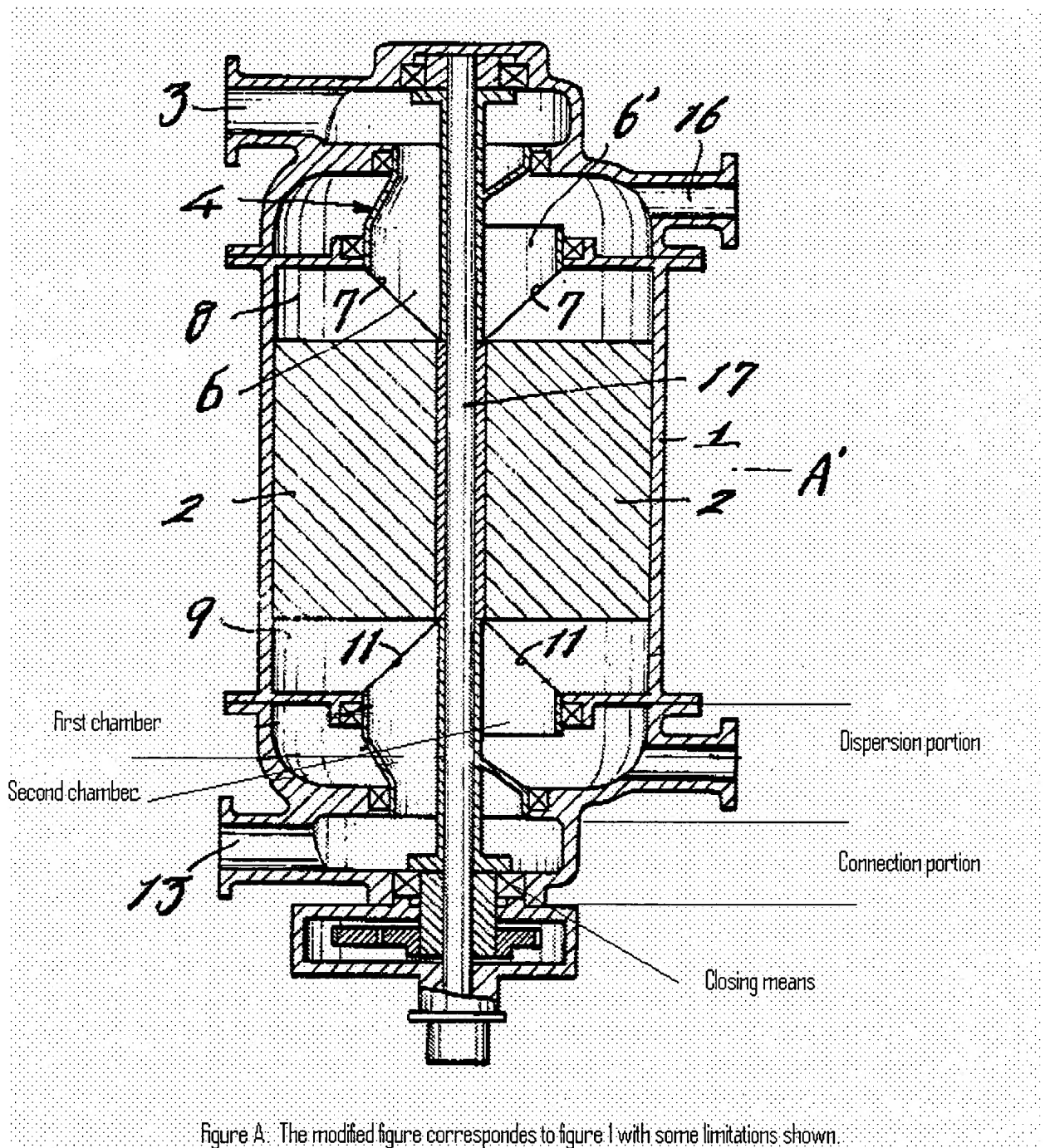
A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3,5,9,11-14,17-18,27,29-33,35-40 and 42 are rejected under 35 U.S.C. 102(b) as being anticipated by Nakajima Seiki (DE 2512065A). Nakajima discloses (figures 1-4 and A) a regenerative energy exchange assembly comprising an exchange media having a casing (101); a first chamber and a second chamber (6,6') having a first, a second fluid channels (12,15) adjacent the exchange media to pass a first fluid stream and a second fluid stream through the exchange media respectively; the first and second chambers separated by a divider; at least one fluid stream diverter (4) being rotatable orientation and providing separate flow communications (13,14) to the chambers through the respective fluid channels; the fluid stream diverter having a radial extent that is less than the functional radial extent of the exchange media, wherein, at any given diverter orientation, the separate flow communications (103,116) are not in fluid communication with the same chamber; a housing (manifold) connected to one end of the exchange media (1) and wherein the fluid channels are provided in the manifold; the manifold has interior walls defining an inner enclosure, and the fluid stream diverter is provided in the inner enclosure; the fluid stream diverter is rotatably mounted within the inner enclosure to provide the diverter within the adjustable orientation; a shaft (17,117) extends rotatably through the exchange media, and the housing (manifold), wherein the fluid stream diverter (4) is fixed to the shaft; the housing (manifold) comprises a connection portion and a dispersion portion which are in fluid communication with each other; the dispersion portion has an open end that is in fluid communication with the exchange media; the connection portion has one port (13) in flow communication with the respect fluid channel and has a radial extent that is less than the radial

Art Unit: 3743

extent of the dispersion portion; the dispersion portion comprises the first and the second chambers. Nakajima further discloses (figure 2) the exchange media is housed in a plurality of media cavities (2) that are separated from one another in cross section and extent in parallel along the exchange media; the plurality of media cavities are positioned in correspondence to the chambers of the dispersion portion; the plurality of cavities are disposed within the casing (1); the connection portion has an open end and a closing means (bearing) which closes the open end. Nakajima discloses (figure 1) the assembly has a first end housing and a second end housing disposed on either end of the exchange media; a first fluid stream diverter (4) is disposed within the end housing and a second fluid stream diverter (10) is disposed within the second end housing; the first and second fluid stream diverters are disposed correspondingly in the respective end housings and rotate by shaft (17) in phase during operation. Nakajima further discloses that the first fluid stream and the second fluid stream are in opposite direction.



### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:



Art Unit: 3743

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima Seiki in view of Ekman H. (FI 000100133). Nakajima substantially discloses all of applicant's claimed invention except for the limitation that the first and second fluid air streams are in the same direction (concurrent flow). The countercurrent flow and concurrent flow heat exchanger are well known in the art, in which the countercurrent flow has two fluid streams flowing in opposite direction and the concurrent flow has two fluid stream flowing in the same direction. Attention is directed to Ekman, Ekman discloses (figure 1) a regenerative heat exchanger that has two fluid streams flowing into the heat exchanger in the same heat exchanger for the purpose of exchanging heat between two fluids. Since Nakajima and Ekman are both from the same field of endeavor and/or analogous art, it would have been obvious to one having ordinary skill in the art at the time the invention was made to use Ekman's teaching for the purpose of exchanging heat between two fluids.

Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Nakajima Seiki in view of Katsu et al. (US 4,856,577). Nakajima substantially discloses all of applicant's claimed invention as discussed above except of the limitation that each cavity media is thermally insulated from adjacent cavities. Katsu disclose (figure 2 and column 1, line 5- column 2, line 63) regenerative heat exchanger that includes a plurality of media cavities (11) wherein the cavities are separated by ceramic bodies, which is a thermal insulating material, for the purpose of reducing the thermal stress due to thermal shock. Since Nakajima and Katsu are both from the same endeavor and/or analogous art, it would have been obvious to one having ordinary skill in

Art Unit: 3743

the art at the time the invention was made to use Katsu' teaching in Nakajima's regenerative heat exchanger for the purpose of reducing the thermal stress due to thermal shock.

***Allowable Subject Matter***

Claims 43-47 are allowed.

Claims 21-25 and 28 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 26 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

In view of the 112<sup>th</sup>, 1<sup>st</sup> paragraph rejection, the examiner has not able to determine whether claims 15-16 and 48-50 are new or inventive.

***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Dunham (US 20020050145A1) discloses an enthalpy wheel.

Moratalla (US 5,702,508) discloses ceramic material is an electrical and thermal insulator.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

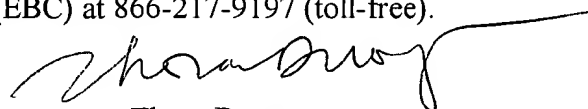
A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v Duong whose telephone number is 703-305-0768. The examiner can normally be reached on M-F (first friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennet can be reached on 703-308-0101. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 3743

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tho v Duong

Examiner

Art Unit 3743

TP

TD

November 22, 2004